

J3 Service

BY BRIAN SWEENEY

Here it Goes: **Jupiter-3** Adjustments and Disassembly.

This is the 6th J-3 that I've worked on. It's not the one that I stayed up with until Midnight trying to get the Helical back together. THAT one was off by 12 ft at 15ft when I received it. The Helical had been mis-threaded. Took me awhile.



J-3, front and back. Some lenses do not have a retaining ring over the rear element.

The lens module simply unscrews from the focus module. (I like that word)

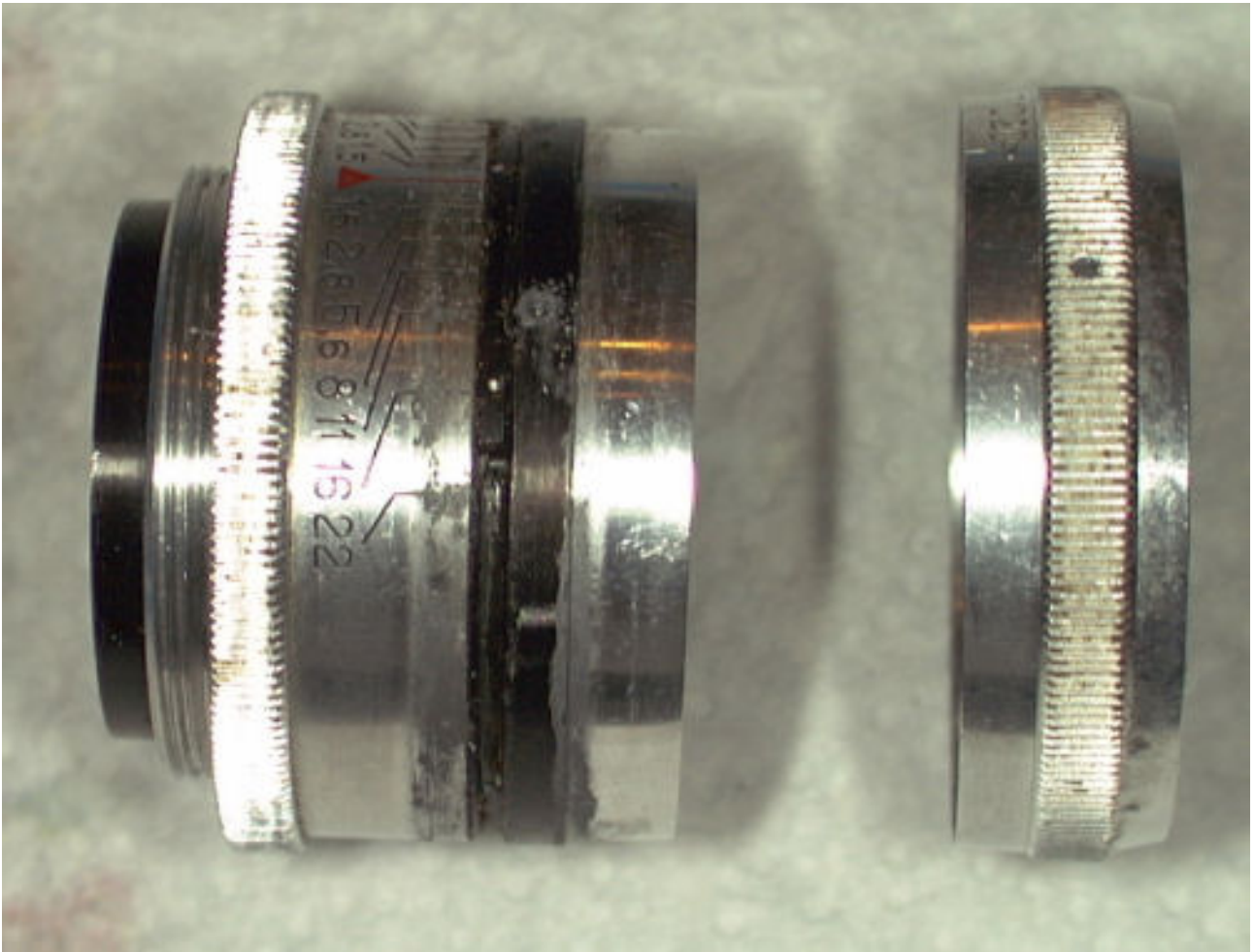


Some come out easily, some fight back. Grab the end of the lens and give a hefty turn. It likely has dried lubricants holding it in place. Some alcohol will be required to clean out the old grease from places where you don't want it. Like your fingernails after you are finished.

Looking at the lens module, the lens' original shim is to the left of the screwdriver, the adjustable stand-off ring is to the right. The latter gives $\sim 1\text{mm}$ of standoff, the shim rests against it. It can be used for fine-tuning the focus, below my smallest 0.1mm shims.

On this lens, I had to use a 3mm shim, made from split retaining rings.

Also, on this lens the RF coupling would not drive the camera's RF to infinity. This was the only lens of 6 that was true of. Two others had infinity set WAY far, like an aircraft in flight. This one had infinity at 20m.



Remove the three set screws on the "way-to-thin" focus collar.

You will see a second set of set screws on MOST J-3's on the lens mount section. The 1950 J-3 had one big set screw in plain sight that looked like a musket ball. Served the same purpose, holds the outer helical in place while you focus.

Remove those inner set screws.

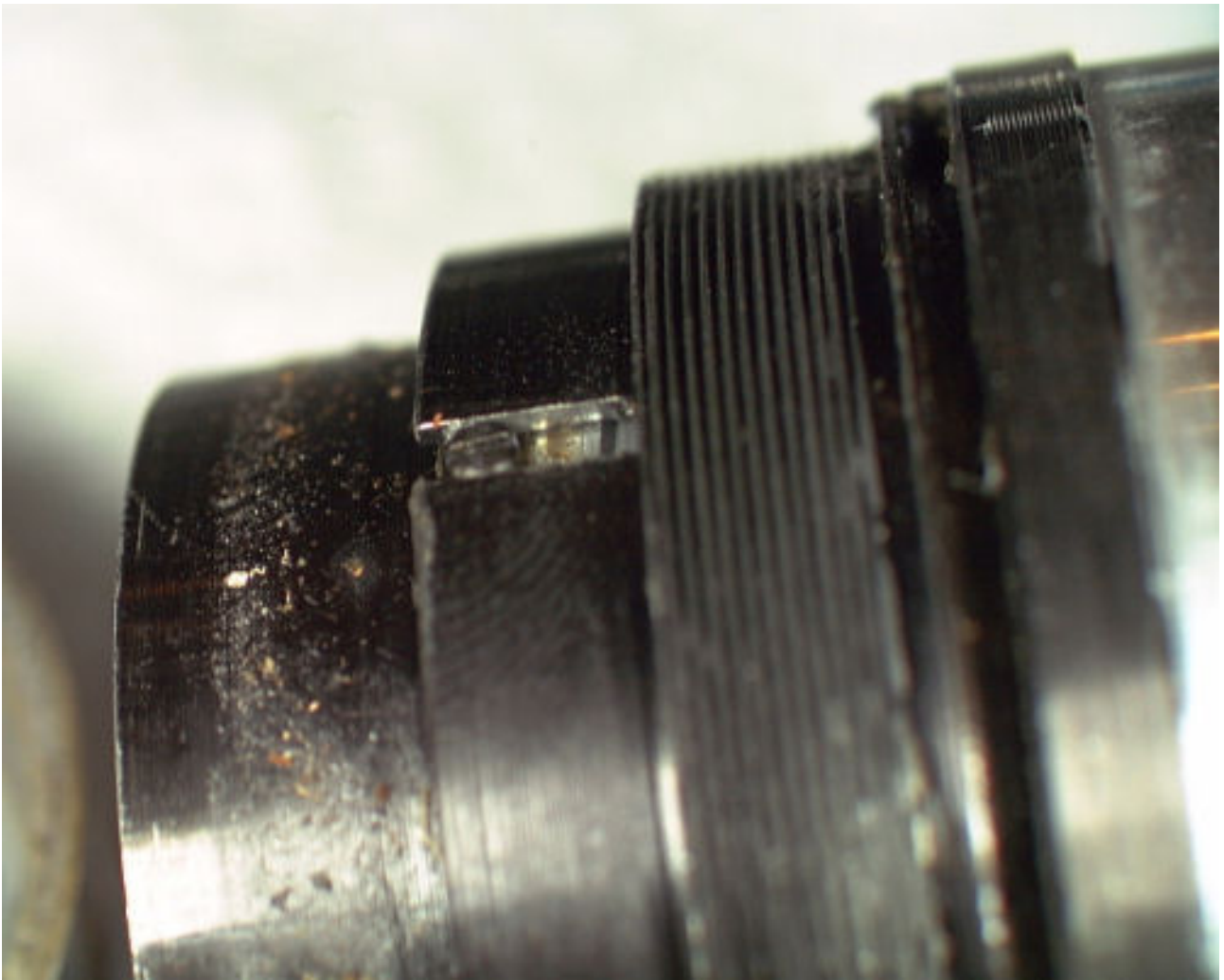


The helical unscrews from the lens mount.



Now, if the focus is rough, and you want to really clean that helical and relube it, like I spent minutes doing Saturday and 2 hours getting back together, remove the guide pins at 180degrees from each other. Easy Part.

Unscrew the helicals. Easy. Clean and Lube. Yucky. Then try to get them together. The trick is to get the helicals started so that you can screw them back together and catch the hole for the guide pin near the back of the throw, back where it started. If you start the helical off in the wrong position, or don't rotate it for the holes to be as far back as possible, you won't get full throw on the focus. This is why my 1950 lens was SO far off.



The infinity was off on this lens. With the Helical back together, set it all the way back toward infinity. The Cam should be as far back as it will go. You may have to put it into the lens mount and tighten it down to get the helical to move. With that done, relax the setscrews and screw the helical into the focus mount until your RF hits infinity. Look at a tree or pole a few hundred feet off for this. I use a treetop at about 300'. Note and mark the position. You do not want it to change. You will probably have to "tap out" some holes for the setscrews to line up in their new position. This is best done with a small drill bit; I am using a 0.040 bit and a hand drill. Power drill should be okay, but start the hole by hand using the collar as a guide. Be careful not to drill out the threads on the collar if they have not stripped yet, over the years.



You now have infinity on the RF, you need to attach the focus collar. Get the drill bit out again. Tap three holes. SOME of The focus collars are too thin and warp if you do not get the holes decently spaced out. Some are pretty hefty. ANYWAY, tap out the holes and screw in the set screws, IF they have survived this far. I'm thinking "Nail Polish" right about now once everything is confirmed working.

Now you are ready to put the lens module back into the focus module. (Lunar Module, Command Module, ...)

I use a negative with some paper from a negative sleeve to test the focus at the film gate. The Canon 7 has "T" and is accurate with my 50mm F0.95 lens. Good Choice.

Ground Glass is often used for this. I have good Luck with this technique. I use tape to hold the film strip in place, line it up on the sprockets.



I use a 15x loupe with a glass at the plane of focus. It is just big enough to lay across the film rails and pretty much acts like the camera's pressure plate. The film strip, which normally bows out from the camera's film gate, is pressed against it and held flat by the loupe's glass plate.

I mount the camera on a tripod, focus using the RF, then look for focus. Screw the lens module in/out to attain focus. Note the stand-off and change out the shims. Once you are down to the last millimeter, you can adjust using the stand-off ring. Loosen its two set screws and rotate it. Get that drill out again, you may have to tap for the set screws once it is in its final position.



I am waiting until results get back on film to finalize the stand-off rings set screws. Once everything is final, you are happy, undo the three set screws from the aperture ring, turn the F-stop to the indicator, and get the drill out again. More Taps for the Set Screws new position.

THAT's ALL FOLKS!!!

I figure when I get another batch of J-3's, I'll be reading this thread! Amazing how soon it "blurs".

Some lenses required a 4mm shim to be added where NONE was present before. One had a shim that was too big. That was easy to fix, several had them too small. On two lenses I could get proper focus by adjusting the stand-off ring alone. All SIX lenses that I've been through required change, all were noticeably off.

All Pictures with my 1998 Nikon E3 Digital Camera, 60mm F2.8 Micro-Nikkor, and SB-29 Speedlight. The E3 is Nikon's last Full-Frame Digital camera.